

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Initially, the Applicants would like to thank the Examiner for the indication that claim 7 is allowable. In this regard, new claim 14 has been added which merges the features of original claim 1 and allowable claim 7. Thus, Applicants respectfully submit that new claim 7 patentably distinguishes over the prior art and is allowable.

In the Official Action, the Examiner rejects claims 1-6 and 8-11 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,787,868 to McGreer et al., (hereinafter “McGreer”). Applicants respectfully traverse the Examiner’s rejection under 35 U.S.C. § 102(e) at least with respect to claims 4 and 6 for at least the reasons set forth below.

In response, claims 1, 2, and 4-6 have been canceled, new independent claims 12 and 13 have been added and claims 3 and 7-11 have been amended to change their dependencies from canceled claim 1 to new independent claim 12. Thus, the rejection of claims 1-6 and 8-11 are moot in view of such amendments.

With regard to original claim 4, new claim 12 has been added which merges the features of original claims 1 and 4. In the Official Action, the Examiner argues that FIG. 2A of the McGreer discloses that a “different refractive index region has a tapered shape decreasing in width toward a central portion of the second slab waveguide” as recited in original claim 4. Applicants respectfully disagree.

McGreer, in FIG. 2A, shows a biconcave integrated lens 22 formed to be axial with each output channel waveguide 14. That is, a plurality of such lenses 22 are arranged widthways in the slab waveguide 16A at a constant pitch in correspondence with each output

channel waveguide 14, in the same way as the optical matching element 20, shown in FIGS. 1 and 10 of McGreer.

Thus, the biconcave integrated lens 22 of McGreer is totally different in form from the different refractive index region as recited in original claim 4 and new claim 12, i.e., "the different refractive index region having a tapered shape decreasing in width from both side portions toward a central portion of the second slab waveguide." Furthermore, the optical properties of such biconcave integrated lens 22 structure is also totally different from that which is recited in original claim 4 and new claim 12.

Thus, Applicants respectfully submit that new claim 12 patentably distinguishes over the prior art, including McGreer, and is allowable. Claims 3 and 7-11 are at least allowable with claim 12 because they depend therefrom.

Furthermore, new claim 13 has been added which merges the features of original claims 1 and 6. In the Official Action, the Examiner argues that FIG. 3A of McGreer discloses "the different refractive index region has a reverse-tapered shape increasing in width toward a central portion of the second slab waveguide" as recited in original claim 6. Applicants respectfully disagree.

McGreer teaches, in FIG. 3A, a lens 32 formed to be axial with each output channel waveguide 14. That is, a plurality of such lenses 32 are arranged widthways in the slab waveguide 16A at constant pitch in correspondence with each output waveguide 14, in the same way as for the optical matching element 20 shown in FIGS. 1 and 10 of McGreer.

Thus the lens 32 of McGreer is totally different in form from the different refractive index region as recited in new claim 13, i.e., "the different refractive index region having a reverse-tapered shape increasing in width from both side portions toward a central

portion of the second slab waveguide." Furthermore, the optical properties of such lens 32 structure is also totally different from that which is recited in original claim 6 and new claim 13.

Thus, Applicants respectfully submit that new claim 13 patentably distinguishes over the prior art, including McGreer, and is allowable.

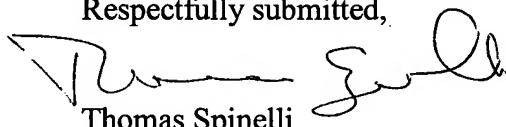
Lastly, McGreer is directed to a different objective than that contemplated by the invention as recited in new claims 12 and 13. Specifically, the objective of McGreer is to reduce optical connection loss of an AWG by providing a different refractive index region between the array waveguide and the slab waveguide. In contrast, the present invention, as recited in new claims 12 and 13, seeks to adjust optical phase by providing a different refractive index region in the second slab waveguide. That is, an objective of the present invention is to obtain broadband wavelength characteristics wherein the peak of the field distribution is flattened, by adjusting optical phase. McGreer does not contemplate such an objective nor does it teach or suggest a solution thereto.

Accordingly, the Examiner is respectfully requested to withdraw the rejection of claims 1-6 and 8-11 and to allow claims 12 and 13 as well as claims 3 and 7-11 which depend therefrom.

In view of the above, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone

conference with Applicant's attorneys would be advantageous to the disposition of this case,
the Examiner is requested to telephone the undersigned.

Respectfully submitted,



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